

ABSTRACT

A method for manufacturing carbon/silicon-carbide composite by a 'One-shot' process including carbonization, heat processing, infiltration, and forming an anti-oxidation layer on surface is provided through the steps of: 1) hardening a stacked carbon/phenolic preform; 2) carbonization and heat processing the preform until the temperature reaches at 2300°C; 3) infiltrating and sintering the liquid metal silicon within the temperature of 1400~1800°C; and 4) inducting a compound including SiO₂ to gas phase and heat processing it while forming an anti-oxidation layer on the surface within temperature range of 2000°C~2700°C (desirably, in the range of higher than 2300°C, and more desirably, at the temperature near 2500°C). Herein, the carbonization, heat processing, and ultra-high heat processing might be performed at the same time in the step 2) and the step 4) might not be performed.

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